

CLAIM AMENDMENTS

IN THE CLAIMS:

This listing of claims wills replace all prior versions, and listings, of claims regarding the present application. In reading this, text added by the amendment is underlined and canceled text appears in ~~striketrough~~.

- 1 1. (Original) An apparatus for preventing cracking of a liquid system, comprising:
2 at least one heat exchanger;
3 at least one inlet port extending through a first opening for conveying a fluid to a plurality
4 of channels and passages;
5 at least one outlet port extending through a second opening for discharging the fluid from
6 the plurality of channels and passages; and
7 one or more compressible objects coupled to the inlet and outlet ports in an unpressured
8 condition such that the compressible objects reduce a volume of the inlet port and the
9 outlet port and further wherein pressure exerted on the compressible object increases a
10 volume of the inlet port and the outlet port.

- 1 2. (Original) The apparatus of claim 1, wherein the compressible objects accommodate a
2 predetermined level of fluid expansion.

- 1 3. (Original) The apparatus of claim 2, wherein the predetermined level of fluid expansion is
2 between 5 to 25 percent.

- 1 4. (Original) The apparatus of claim 1, wherein the compressible objects being capable of
2 contracting and expanding between a minimum volume and a maximum volume.

- 1 5. (Original) The apparatus of claim 1, wherein the compressible objects being secured
2 within the inlet port and the outlet port.

- 1 6. (Original) The apparatus of claim 1, wherein the compressible objects are confined within
2 the inlet port and the outlet port.
- 1 7. (Original) The apparatus of claim 1, wherein the compressible objects are made of one of
2 the following: sponge, foam, air-filled bubbles, or balloons.
- 1 8. (Original) The apparatus of claim 7, wherein the sponge or foam is hydrophobic.
- 1 9. (Original) The apparatus of claim 1, wherein the compressible object is encapsulated in a
2 gas or liquid impermeable package.
- 1 10. (Original) The apparatus of claim 9, wherein the package is formed of metallic barrier
2 material or metallized plastic sheet material.
- 1 11. (Original) The apparatus of claim 9, wherein the package has a hydrophilic surface or
2 coating.
- 1 12. (Original) The apparatus of claim 9, wherein the package is formed of plastic material.
- 1 13. (Currently Amended) The apparatus of claim 12, wherein the plastic material is selected
2 from the group teflon, mylar, PET, PEN, and PVC, ~~or other suitable plastic materials.~~
- 1 14-24 (Withdrawn).
- 1 25. (Original) An apparatus for preventing cracking of a liquid system, comprising:
2 an enclosure; and
3 one or more compressible objects immersed in the enclosure.
- 1 26. (Original) The apparatus of claim 25, wherein the objects accommodate a predetermined
2 level of fluid expansion.
- 1 27. (Original) The apparatus of claim 26, wherein the predetermined level of fluid expansion
2 is between 5 to 25 percent.

- 1 28. (Original) The apparatus of claim 25, wherein the objects having a size and volume
2 proportion to an amount of fluid in the enclosure.
- 1 29. (Original) The apparatus of claim 25, wherein the objects are a hydrophobic foam.
- 1 30. (Original) The apparatus of claim 25, wherein the object are a hydrophobic sponge.
- 1 31. (Original) The apparatus of claim 25, wherein the objects are made of one of the
2 following: sponge, foam, air-filled bubbles, or balloons.
- 1 32. (Original) The apparatus of claim 25, wherein the objects are encapsulated in a gas or
2 liquid impermeable package.
- 1 33. (Original) The apparatus of claim 32, wherein the package is formed of metallic barrier
2 material or metallized plastic sheet material.
- 1 34. (Original) The apparatus of claim 32, wherein the package is formed of plastic material.
- 1 35. (Currently Amended) The apparatus of claim 34, wherein the plastic material is selected
2 from the group teflon, mylar, PET, PEN, and PVC, ~~or other suitable plastic materials.~~
- 1 36-46 (Withdrawn).
- 1 47. (Original) A method of preventing cracking of a liquid system, the system including one
2 or more pumps and one or more heat exchangers, the method comprising the steps of:
3 providing an enclosure; and
4 immersing one or more compressible objects in the enclosure.
- 1 48. (Original) The method of claim 47, wherein the objects accommodate a predetermined
2 level of fluid expansion.

- 1 49. (Original) The method of claim 48, wherein the predetermined level of fluid expansion is
2 between 5 to 25 percent.
- 1 50. (Original) The method of claim 47, wherein the objects having a size and volume
2 proportion to an amount of fluid in the enclosure.
- 1 51. (Original) The method of claim 47, wherein the objects are a hydrophobic foam.
- 1 52. (Original) The method of claim 47, wherein the objects are a hydrophobic sponge.
- 1 53. (Original) The method of claim 47, wherein the objects are made of one of the following:
2 sponge, foam, air-filled bubbles, or balloons.
- 1 54. (Original) The method of claim 47, wherein the objects are encapsulated in a gas or liquid
2 impermeable package.
- 1 55. (Original) The method of claim 54, wherein the package is formed of metallic barrier
2 material or metallized plastic sheet material.
- 1 56. (Original) The method of claim 54, wherein the package is formed of plastic material.
- 2 57. (Currently Amended) The method of claim 56, wherein the plastic material is selected
3 from the group teflon, mylar, PET, PEN, and PVC, ~~or other suitable plastic materials.~~
- 1 58-69 (Withdrawn).
- 1 70. (Currently Amended) An apparatus for preventing cracking of a liquid system, the system
2 including one or more pumps and one or more heat exchangers, comprising an enclosure,
3 wherein the enclosure being capable of contracting and expanding between a minimum
4 size and volume condition and a maximum size and volume condition with fluid
5 expansion during freezing.
- 1 71-132 (Withdrawn).